

WHAT WE CLAIM IS:

1. A high-thrust linear motor comprising:
a magnetic member having a plurality of slots formed
in series in an axial direction thereof, said slots
5 extending from both sides of said magnetic member in
opposite directions intersecting said axial direction in
corresponding relation to each other;

coils each wound in a pair of said slots on both
sides of said magnetic member; and

10 field magnets extending in said axial direction at
both sides of said magnetic member so as to face an
effective conductor portion of each of said coils, said
field magnets each having a plurality of pairs of magnetic
poles magnetized in said axial direction.

15 2. A high-thrust linear motor according to claim 1,
wherein said coils have a plurality of phases and are
wound in respective pairs of said slots in said magnetic
member in such a manner that each pair of adjacent phases
are different in electrical angle from each other.

20 3. A high-thrust linear motor according to claim 1
or 2, further comprising:

a cover member for covering said magnetic member and
said coils approximately entirely, exclusive of effective
conductor portions of said magnetic member and said coils.

25 ³ 3. A high-thrust linear motor according to claim ^{2,2} 3,
wherein said cover member includes:

a pair of cover elements disposed to cover said
magnetic member and said coils approximately entirely; and

connecting means for integrally connecting together
said pair of cover elements.

4/ 5. A high-thrust linear motor according to claim ^{3 3} ~~4~~,
wherein said connecting means is formed from a material
5 having high thermal conductivity and disposed in contact
with or close proximity to said magnetic member.

5/ 6. A high-thrust linear motor according to ^{claim 3} ~~any one~~
~~of claims 3 to 5~~, further comprising:

a
a
10 a non-magnetic material filled in a space between
said magnetic member and said coils on one hand and said
cover member on the other.

7. A method of producing a high-thrust linear motor,
said method comprising the steps of:

15 preparing a magnetic member having a plurality of
slots formed in series in an axial direction thereof, said
slots extending from both sides of said magnetic member in
opposite directions intersecting said axial direction in
corresponding relation to each other; and

20 winding coils in respective pairs of said slots on
both sides of said magnetic member while rotating said
magnetic member.